a low voltage input (10),

lo said high voltage transformer characterized in that,

each of the conventional (1-5 and 7) and 1'-5' and 7') elements has a first end and a second end opposite to the first end, with the first ends of all elements connected to ground level, that is to say, zero voltage,

said conventional elements are arranged in two differentiated groups, on the one hand the elements with positive voltages (1-5 and 7) and, on the other, the elements with negative voltages (1'-5' and 7')

the elements with positive voltages (1-5 and 7) are separated from the elements with negative voltages (1-5 and 7) by solid insulating means,

the voltage in each of said conventional elements progressively increases towards the opposed second end in the elements with positive voltages and progressively decreases in the elements with negative voltages, all this in such a manner that, at an equal distance from the ground level, the elements of each group have equipotential voltages.

5. (Amended) A high voltage transformer according to any of claims 1-3 or 4,

characterized in that the maximum level of potential is defined at the lower ends of the high voltage switches (5,5').

